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UNITED STATES DEPARTMENT OF AGRICULTURE
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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project

Date

Author A. L. Gibson

TITLE

SEVENTEENTH ANNUAL SURVEY OF
MOUNTAIN PINE BEETLE ACTIVITY ON THE
COEUR D'ALENE NATIONAL FOREST
1945

by
A. L. Gibson
Entomologist

Forest Insect Laboratory
Coeur d'Alene, Idaho
July 10, 1950

FOREST SERVICE - MISSOULA, MONTANA

Chief, Forest Service, Washington 25, D.C. December 13, 1945

P. D. Manson, Regional Forester, By A. G. Lindh

S - CONTROL - Coeur d'Alene - Insect

Attached is a copy of Mr. Evenden's memorandum of December 7 accompanied by Gibson's report on insect infestation on the Coeur d'Alene Forest.

To treat the infested trees within the area of heaviest infestation will require \$15,650. Are there funds available for allotment to us?

If the project can be financed and we have assurance of it at an early date, we will endeavor to develop a plan under the 1914 Act for obtaining cooperation from one of the potential log buyers in the area to the extent of the log value on the road minus the stumpage value. By removal, the cost of peeling or spraying will be saved. We have our own teams but will plan to obtain any additional horse logging equipment needed from the cooperating company.

It is obvious that the continuation of control in this area is at best only a holding operation. However, the values at stake are high. It is my belief that we can hold insect losses to not more than 2 or 3 percent of the merchantable volume annually for a few more years if we remove the concentrated infestations.

It has been agreed in the Region to place very high in priority the construction of the main logging road up the Coeur d'Alene River so there is hope that we will be able to log 30 or 40 percent of the volume as a commercial operation within the next five years. With this objective in mind, it is very much worthwhile to try to remove this concentrated infestation next spring. Early advice will be appreciated.

A. G. Lindh

cc: Coeur d'Alene (2)
Mr. Evenden

Attachment



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Agricultural Research Administration
Forest Insect Laboratory
Coeur d'Alene, Idaho

December 7, 1945

To: Regional Forester, Federal Building, Missoula, Montana
From: James C. Evenden, Box 630, Coeur d'Alene, Idaho
Subject: Mountain Pine Beetle Infestation - Coeur d'Alene
National Forest

I am enclosing two copies of a brief report by Mr. Gibson which gives the results of his survey of a few areas on the Coeur d'Alene National Forest. It is regretted that we were unable to obtain more data from these areas or to include other units as planned, but adverse weather conditions made this impossible. Although recognizing the inadequacy of our data, it is apparent that there is still an insect situation within the so called Yellow Dog-Downey Creek Units, that is taking a serious annual toll of merchantable white pine. Throughout this area the infestation is perhaps comparable in severity to that which has existed for the past 17 years and which control, as practiced, has not eliminated. However, on the eastern portion of the Yellow Dog Creek Unit a more serious situation exists. You will note from Mr. Gibson's report that on this area of some 1120 acres, as shown on the accompanying map, there is an infestation of 1.61 infested trees per acre or a total of 1,803 trees. This years loss represents 1.9% of the green trees above 8" in diameter.

As this situation has been the subject of considerable discussion for a number of years, I would like to present for your consideration some phases of this problem. It is quite obvious that for the past 17 years these timber stands have been extremely susceptible to infestations of the mountain pine beetle. Until this susceptibility is reduced, this condition will continue until a large percent of the white pine has been destroyed. The history of control and the timber losses which have occurred within this area supports this position. On approximately 16,000 acres, a total of 94,716 trees or some 47,358,000 B.F. of white pine has been killed by the mountain pine beetle. From time to time during this period, a total of 27,228 trees have been treated in an attempt to check the seriousness of this infestation. Regardless of this effort, the continued existence of mountain pine beetle activity

2-Regional Forester, Missoula-12/7/45

would seem to place the benefits of control in a very doubtful light, however, this position is not the belief of this office. The treatment of a portion of an infestation reduces the subsequent seasons loss proportionately, and we know that as a result of control the white pine loss in these units has not only been materially reduced but serious epidemics have quite probably been prevented. It is impossible to more than estimate what the total white pine loss would have been had no control been instituted. We claim for the results of control the present status of the timber stands within this area, which although in many portions are in a sadly depleted condition, still constitute a valuable forest asset. We further claim that had this "hot spotting" method of control been more intensive, with the work being extended into less seriously infested areas, the so called visual benefits of control would have been more obvious.

In contemplating a reduction of present white pine losses to a minimum level, the soundest entomological approach would be to include this entire area in an annual program of maintenance control. Such a program would be based on the adoption of an acceptable loss and whenever the infestation increased above that figure, control measures would need be extended throughout the unit, or units involved. Although the question of control economics should be separated from entomological recommendations, in this situation it has not been easy to do so. The general infestation of these units is assumed to be about the same as it has been during the past years, which would make the recommendation of such a program difficult to justify. This would be especially true at this time as unfortunately we do not have significant data concerning the existing status of the infestation in all of these units. In further contemplation of this plan, we recognize that artificial control has not and will not eliminate bark beetle losses from this area as long as present stand conditions exist. It will, if instituted in sufficient intensity, keep the infestation at a low level and prevent the development of devastating epidemics. The justification for such a program of control will decrease in proportion to the length of time over which protection must be extended, before the susceptibility of the stand to insect attack is reduced through partial, or harvest cuts. It is obvious that under such situations there is both an entomologically and an economically limit to the period of time that such a program of maintenance control can be justified. Not only do the losses of white pine accumulate to tremendous volumes, with the annual loss exceeding the annual increment, but stand compositions are changed to inferior tree species, and the danger of severe epidemics multiplied as the susceptibility of the stand increases with age. As a result, in time the same devastated timber stand will eventually prevail as would have existed had no control been instituted.

In connection with the situation as presented by Mr. Gibben, it is recommended that control be instituted within the eastern portion of the Yellow Dog Creek Unit as being the "hot spot" of infestation.

3-Regional Forester, Missoula-12/7/45

To treat the infested trees within this area would require an expenditure of approximately \$15,650. The entomological justification for this recommendation is based upon a realization that this infestation can give rise to more serious epidemic conditions throughout a much larger area. In such control planning, it must be understood that the results which will follow the "hot spotting" of such a small portion of the general area will not be spectacular and may be intangible. I would consider that the results of control within this unit would be successful if, in 1946, the infestation was not more than one tree per acre. To show outstanding reductions in the severity of an infestation, control measures must be instituted on areas of sufficient size that the benefits which accrue will not be influenced from flights of beetles from untreated areas adjacent. This 1120 acre area can in no way be considered as an infestation unit of this character. In connection with the benefits to be expected from control, it will be noted that as a result of partial control within the Sissons Unit in 1945, the subsequent infestation was reduced to approximately 50 percent.

I have attempted to show the relationship of the entomological and economic phases of this problem which in a complete evaluation are difficult to separate. To preserve the residual white pine values of this area, until such time as the timber stand can be placed under some plan of intensive management, it is quite obvious that some plan of maintenance control must be conducted. My recommendation which is founded upon significant data is given as a minimum requirement for the institution of this plan of control in 1946. If additional funds are available, they could be spent in the extension of control into other portions of this area on the same basis as the recommended projects. Although, as stated, the results obtained may not be visually spectacular, they will serve to keep the infestation at a below epidemic level.

I regret that we do not have infestation data from all the white pine stands within the region. We realize we do not have our fingers upon the mountain pine beetle situation, and that it is quite probable that even more serious infestations exist than the situation with which we are concerned.

cc: F. C. Craighead (2)
Coeur d'Alene Nat. For.

SEVENTEENTH ANNUAL SURVEY OF
MOUNTAIN PINE BEETLE ACTIVITY ON THE
COMAR D'ALENE NATIONAL FOREST
1945

by
A. L. Gibson
Associate Entomologist

Examination of certain heavily infested units of the Comar d'Alene National Forest was begun October 23, but due to increasingly adverse weather conditions was terminated on Nov. 9, when effective work became too difficult. During the above period surveys were made of the Sissons, Yellow Dog River, and part of the Yellow Dog Creek Units. The data obtained and comments concerning these units are presented on the following pages. Table I gives a comparison of the data for the last four years for the units surveyed in 1945.

A more detailed account of conditions on each unit is given in the following pages.

Yellow Dog River Unit	Acreage 2140
Attacked trees per acre	.71
Percent of stand killed	1.0
Estimated infested trees on unit	1511

Inspection of the data for this unit for the last two years indicates a reduction in attacked trees for 1945 as compared with the preceding year. Although broad abundance in trees attacked the current year does not indicate a potential increase in 1946, it must be pointed out that in the last 5 years nearly 8 percent of the stand has been killed and that the 1945 loss was heavy. We cannot assume that the indicated decrease in 1945 will continue in 1946. As was pointed out in the 1944 report of the Comar d'Alene survey, losses have been 50 percent or more on many of the east to south to west slopes which support a stand of western white pine.

Yellow Dog Creek Unit	Acreage 4120
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No data was secured for much of the western part of this unit. However, the eastern part, which, in the past, has shown a heavy concentration of infestation is the area with which we are chiefly concerned. On that area, sufficient data was secured to indicate conditions. For that part of the unit, the following data is submitted:

Data for eastern part of the unit

Acreage 1120

Attacked trees per acre	1.61
Percent of stand killed	1.9
Estimated infested trees	1803

The infestation in the eastern part of the unit has apparently more than doubled in the last year.

In this eastern part, comprising about 1120 acres, losses in the last 5 years have been at least double the amount on the remaining 3000 acres of the unit; or at least 5 percent. East to south to west slopes have had losses of over 50 percent of the mature white pine in many places. We cannot assume from present indications that an epidemic condition will not continue on this area in 1946.

Sissons Unit

Acreage 4700

Control work was conducted on part of this unit in 1945. Present infestation on the unit is estimated as follows:

Attacked trees per acre	.2
Percent of stand killed	.5
Estimated infested trees on unit	940

A comparison of data for 1944 and 1945 shows a decided decrease in infestation in 1945. Much of this decrease can be credited to the treating of 587 infested trees on about 1000 acres of this unit. On the treated portion of the unit the infestation is believed to have been reduced about 66 percent. Reinfestation on the treated area is believed to have been due to missed trees and possibly, to insects coming in from untreated areas adjoining. Examinations of infested trees indicate the lightest developing brood of the three units examined.

Although a decrease is noted on this unit, it must be noted that an epidemic condition still exists.

Downey Creek Unit

Acreage 4160

No examination was made of the Downey Unit but it is believed the epidemic conditions present in 1944 in the northern part of this drainage are continuing.

TABLE I

MOUNTAIN PINE BEETLE INFESTATION IN WESTERN WHITE PINE
COMUE D'ALENS NATIONAL FOREST

1945

	Unit Acreage	Infested Trees Per Acre in				Infested Trees on Unit in				Percent of Stand Killed in			
		1945	1944	1943	1942	1945	1944	1943	1942	1945	1944	1943	1942
Yellow Dog R. (Eastern part)	2,140	.71	.95	.83	.66	1,511	2,033	1,780	1,412	1.0	1.7	1.9	1.4
Yellow Dog Cr.	1,120	1.61	.79	---	---	1,803	879	---	---	1.9	.8	---	---
Sissons	<u>4,700</u>	.2	.42	.62	.50	<u>940</u>	<u>1,979</u>	<u>2,926</u>	<u>2,350</u>	.5	1.2	2.0	1.6
Totals	7,960					4,524	5,575	4,708	3,762				